



## DEPARTMENT OF COMMERCE

### Bureau of Industry and Security

[Docket No. 210915-0189]

RIN 0694-XC084

### Notice of Request for Public Comments on Risks in the Semiconductor Supply Chain

**AGENCY:** Bureau of Industry and Security, Office of Technology Evaluation, U.S. Department of Commerce.

**ACTION:** Notice of request for public comments.

**SUMMARY:** The Department of Commerce (“Department”) (Bureau of Industry (“BIS”)) led the 100-Day Supply Chain Review of semiconductors and advanced packaging that was mandated by Presidential Executive Order. On February 24, 2021, President Biden issued an Executive Order on “America’s Supply Chains,” which directs several federal agency actions to secure and strengthen America’s supply chains. This review, included in the White House Report “Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth”, identified numerous areas of supply chain vulnerabilities. The ongoing shortages in the semiconductor product supply chain are having an adverse impact on a wide range of industry sectors. With the goal of accelerating information flow across the various segments of the supply chain, identifying data gaps and bottlenecks in the supply chain, and potential inconsistent demand signals, the Department is seeking responses from interested parties (including domestic and foreign semiconductor design firms, semiconductor manufacturers, materials and equipment suppliers, as well as semiconductor intermediate and end-users) to the questions set forth in this notice.

**DATES:** The due date for filing comments is [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:**

*Submissions:* You may submit comments, identified by docket number BIS 2021-0036 or RIN 0694-XC084, through the *Federal eRulemaking Portal*: <http://www.regulations.gov>. To submit comments via <https://www.regulations.gov>, enter docket number BIS-2021-0036 on the home page and click “search.” The site will provide a search results page listing all documents associated with this docket. Find a reference to this notice and click on the link entitled “Comment Now!” (For further information on using <https://www.regulations.gov>, please consult the resources provided on the website by clicking on “How to Use This Site.”) BIS requires commenters submitting comments via <https://www.regulations.gov> to first download a fillable form from the BIS website at <https://bis.doc.gov/semiconductorFRN2021> and to then submit the filled out electronic form in <https://www.regulations.gov> when submitting comments in response to docket number BIS 2021-0036 or RIN 0694-XC084.

**FOR FURTHER INFORMATION CONTACT:**

David Boylan, Defense Industrial Base Division, Office of Technology Evaluation, Bureau of Industry and Security, at 202-482-7816, [SemiconductorStudy@bis.doc.gov](mailto:SemiconductorStudy@bis.doc.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

BIS led the Department’s 100 Day Supply Chain Review of semiconductors and advanced packaging that was mandated by Presidential Executive Order (E.O.) 14017. On February 24, 2021, President Biden issued E.O. 14017 on “America’s Supply Chains,” which directs several federal agency actions to secure and strengthen America’s supply chains.

This review, included in the White House Report “Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth” (available at: <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>) (last accessed September 3, 2021), identified numerous areas of supply chain vulnerabilities. In addition to the longer-term goals such as strengthening the domestic semiconductor manufacturing ecosystem and promoting U.S. leadership, this report called upon

the Department to partner with industry to facilitate information flow between semiconductor producers and suppliers and end-users to address the current semiconductor shortage. The ongoing shortage of semiconductor products is having an adverse impact on a wide range of industry sectors.

With the goal of facilitating the flow of information across the various segments of the supply chain, identifying data gaps and bottlenecks in the supply chain, and potential inconsistent demand signals, the Department is seeking responses from interested parties (including domestic and foreign semiconductor design firms, semiconductor and microelectronics manufacturers, materials and equipment suppliers, as well as semiconductor product intermediate and end-users) to the questions set forth in this notice.

Information submitted in response to this request may contain business proprietary information, which will not be published and will be protected from disclosure, provided the submitters follow the instructions below for submitting confidential business information in the public comments.

### **Written Comments**

Interested parties are invited to submit written comments, data, analyses, or information pertinent to this request to BIS's Office of Technology Evaluation no later than [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

While the Department invites input from all interested parties, it is particularly interested in obtaining information from foreign and domestic entities that actively participate in the semiconductor product supply chain at any level (e.g., semiconductor design, front end semiconductor wafer fabrication, semiconductor assembly test and packaging, microelectronics assembly, intermediate and end-users of semiconductors and microelectronics, distributors of such products, as well as entities supporting semiconductor and microelectronics manufacturing as providers of materials and equipment). To allow for aggregation and comparison of data from multiple respondents, the Department has posted a fillable form on the BIS website that

commenters must download and fill out for submission to <https://www.regulations.gov>. See the ADDRESSES section of this notice for where to find the fillable forms.

The Department is specifically seeking the following information and data:

1. For semiconductor product design, front and back-end manufacturers and microelectronics assemblers, and their suppliers and distributors:
  - a. Identify your company's role in the semiconductor product supply chain.
  - b. Indicate the technology nodes (in nanometers), semiconductor material types, and device types that this organization is capable of providing (design and/or manufacture).
  - c. For any integrated circuits you produce--whether fabricated at your own facilities or elsewhere--identify the primary integrated circuit type, product type, relevant technology nodes (in nanometers), and actuals or estimates of annual sales for the years 2019, 2020, and 2021 based on anticipated end use.
  - d. For the semiconductor products that your organization sells, identify those with the largest order backlog. Then for the total and for each product, identify the product attributes, sales in the past month, and location of fabrication and package/assembly.
    - i. List each product's top three current customers and the estimated percentage of that product's sales accounted for by each customer.
  - e. For each phase of the production process, identify whether your organization carries out the step internally or externally. For your organization's top semiconductor products, estimate each product's (a) 2019 lead time and (b) current lead time (in days), both overall and for each phase of the production process. Provide an explanation of any current delays or bottlenecks.
  - f. For your organization's top semiconductor products, list each product's typical and current inventory (in days), for finished product, in-progress product, and inbound product. Provide an explanation for any changes in inventory practices.

- g. What are the primary disruptions or bottlenecks that have affected your ability to provide products to customers in the last year?
- h. What is your organization's book-to-bill ratio for the past three years? Explain any changes.
- i. If the demand for your products exceeds your capacity, what is the primary method by which your organization allocates the available supply?
- j. Does your organization have available capacity? If yes, what is preventing the filling of that capacity?
- k. Is your organization considering increasing its capacity? If yes, in what ways, over what timeframe, and what impediments exist to such an increase? What factors does your organization consider when evaluating whether to increase capacity?
- l. Has your organization changed its material and/or equipment purchasing levels or practices in the past three years?
- m. What single change (and to which portion of the supply chain) would most significantly increase your ability to supply semiconductor products in the next six months?
- 2. Questions for intermediate users and end users of semiconductor products or integrated circuits:
  - a. Identify your type of business and the types of products you sell.
  - b. What are the (general) applications for the semiconductor products and integrated circuits that you purchase?
  - c. For the semiconductor products that your organization purchases, identify those that present the greatest challenge for your organization to acquire. Then for each product, identify the product attributes and purchases in 2019 and 2021, as well as average monthly orders in 2021. Then estimate the quantity of each product your organization would purchase in the next six months barring any production constraints as well as the amount your organization expects to actually be able to purchase. For each of your

organization's top semiconductor products, estimate each product's lead times and your organization's inventory for (a) 2019 and (b) currently (in days). Provide an explanation of any current delays or bottlenecks.

- d. What are the primary disruptions or bottlenecks that have affected your ability to provide products to customers in the last year?
- e. Is your organization limiting production due to lack of available semiconductors? Explain.
- f. What percentage of your current production has your organization had to defer, delay, reject, or suspend in the past year? Explain.
- g. Is your organization considering or carrying out new investments to mitigate semiconductor sourcing difficulties? Explain.
- h. What semiconductor product types are most in short supply and by what estimated percentage relative to your demand? What is your view of the root cause?
- i. Has your organization changed its material and/or equipment purchasing levels or practices in the past three years?
- j. What single change (and to which portion of the supply chain) would most significantly increase your ability to purchase semiconductors in the next six months?
- k. What percentage of your orders are fulfilled by distributors versus through direct purchase orders to semiconductor product manufacturers?
- l. For the semiconductor products your organization purchases, how long (in months) are the typical purchase commitments? How, if at all, do your organization's purchase commitments differ for products in short supply?
- m. Has your organization faced "de-commits" (defined as a notification from a supplier that expected or committed supply will not be delivered in the agreed-upon time and quantity) in recent months? If this is a significant issue, please explain (e.g., nature of product, supplier, impact).

## **Requirements for Written Comments**

The <https://www.regulations.gov> website allows users to provide comments by filling in a “Type Comment” field, or by attaching a document using an “Upload File” field. As noted above, commenters will be required to use the BIS fillable form available on the BIS website when submitting comments in <https://www.regulations.gov>. The Department prefers that any additional comments be provided in a separate attached document. The Department prefers supplemental submissions in Microsoft Word (.doc files) or Adobe Acrobat (.pdf files). If the submission is in an application format other than Microsoft Word, Microsoft Excel, or Adobe Acrobat, please indicate the name of the application in the “Type Comment” field. Please do not attach separate cover letters to electronic submissions; rather, include any information that might appear in a cover letter within the comments. Similarly, to the extent possible, please include any exhibits, annexes, or other attachments in the same file, so that the submission consists of one supplemental file instead of multiple additional files. Comments (both public comments and non-confidential versions of comments containing business confidential information) will be placed in the docket and open to public inspection. Comments may be viewed on <https://www.regulations.gov> by entering docket number BIS–2021–0036 in the search field on the home page.

All filers should name their files using the name of the person or entity submitting the comments. Anonymous comments are also accepted. Communications from agencies of the United States Government will not be made available for public inspection.

Anyone submitting business confidential information should clearly identify the business confidential portion at the time of submission, file a statement justifying nondisclosure and referring to the specific legal authority claimed, and provide a non-confidential version of the submission. The BIS fillable form available on the BIS website referenced above will allow for an indication at the top of each page for whether it contains business confidential information.

Users submitting a form that contains business confidential information, will need to submit a non-confidential version of the same form that does not contain the confidential business information. The non-confidential version of the submission will be placed in the public file on <https://www.regulations.gov>. For comments submitted electronically containing business confidential information, the file name of the business confidential version should begin with the characters “BC”. Any page containing business confidential information must be clearly marked “BUSINESS CONFIDENTIAL” on the top of that page. The non-confidential version must be clearly marked “PUBLIC”. The file name of the non-confidential version should begin with the character “P”. The “BC” and “P” should be followed by the name of the person or entity submitting the comments or rebuttal comments. If a public hearing is held in support of this assessment, a separate *Federal Register* notice will be published providing the date and information about the hearing.

BIS does not maintain a separate public inspection facility. Requesters should first view the BIS’s web page, which can be found at <https://efoia.bis.doc.gov/> (see “Electronic FOIA” heading). If requesters cannot access the website, they may call 202-482-0795 for assistance. The records related to this assessment are made accessible in accordance with the regulations published in part 4 of title 15 of the Code of Federal Regulations (15 CFR 4.1 through 4.11).

**Matthew S. Borman,**

*Deputy Assistant Secretary for Export Administration.*

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